

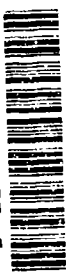
# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 1993		3. REPORT TYPE AND DATES COVERED ADODCAS 1993	
4. TITLE AND SUBTITLE <i>How to Read, Understand, &amp; Analyze Contractor Financial Reports</i>				5. FUNDING NUMBERS	
6. AUTHOR(S) <i>Mr. Nopichai Jamsakuldech</i>					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <i>ESC/FMCE-2 9 Eglon St Hanscom AFB, MA 01731-2117</i>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES  Annual Department of Defense Cost Analysis Symposium Paper					
12a. DISTRIBUTION / AVAILABILITY STATEMENT  Statement A: Approved for Public Release; Distribution is Unlimited				12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)  See Over  <b>DTIC QUALITY INSPECTED 3</b>  <i>3pg</i> <b>94-04877</b> <b>94 2 10 201</b>					
14. SUBJECT TERMS <i>Contractor Financial Reports</i>				15. NUMBER OF PAGES	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT U	18. SECURITY CLASSIFICATION OF THIS PAGE U	19. SECURITY CLASSIFICATION OF ABSTRACT U	20. LIMITATION OF ABSTRACT UL		

AD-A275 657



Accession For		
NTIS	CRA&I	<input checked="" type="checkbox"/>
DTIC	TAB	<input type="checkbox"/>
Unannounced		<input type="checkbox"/>
Justification		
By		
Distribution /		
Availability Codes		
Dist	Avail and/or Special	
A-1		

## 27th ANNUAL DOD COST ANALYSIS SYMPOSIUM

### HOW TO READ, UNDERSTAND, & ANALYZE CONTRACTOR FINANCIAL REPORTS

PRESENTED BY  
 NOPACHAI IAMSAKULDACHA (JAMES)  
 ESC/FMCE-2  
 9 EGLIN ST  
 HANSCOM AFB MA 01731-2117  
 (617) 377-7425 OR DSN 478-7425

## HOW TO READ, UNDERSTAND, & ANALYZE CONTRACTOR FINANCIAL REPORTS

Publicly owned companies prepare annual reports to describe the financial activities and condition of the company to interested parties such as investors, creditors, and the Security and Exchange Commission. There are four basic formats presented in these annual reports. These formats are generally referred to as: 1) Balance Sheets; 2) Income Statement; 3) Statement of Cash Flows; and, 4) Statement of Retained Earnings.

A majority of defense contractors are publicly owned companies and often time many government cost analysts overlook the importance of contractor financial data. The objective of this lesson is to acquaint the government cost analyst with the basic make-up of the contractor financial reports, and to help the analyst develop the best possible evaluation of the financial condition and performance of the firm. The financial statement analysis process requires careful analysis of all relevant past, present, and future financial information.

Nopachai (James) Iamsakuldacha  
ESC/FMCE-2  
9 Eglin St  
Hanscom AFB, MA 01731-2117  
(617) 377-7425 or DSN 478-7425  
(617) 377-8136 or DSN 478-8136

## HOW TO READ, UNDERSTAND, & ANALYZE CONTRACTOR FINANCIAL REPORTS

Publicly owned companies prepare annual reports to describe the financial activities and condition of the company to interested parties such as investors, creditors, and the Security and Exchange Commission. There are four basic formats presented in these annual reports. These formats are generally referred to as: 1) Balance Sheet; 2) Income Statement; 3) Statement of Cash Flows; and 4) Statement of Retained Earnings. Program Managers and government cost analysts can easily utilize the information from a company's annual reports to analyze the overall financial health and the effectiveness of its operation.

### **The Balance Sheet**

The balance sheet represents the financial picture or the financial condition of the company at a point in time. In a typical US Manufacturing firm, the balance sheet not only includes the most recent year, but also the previous year. This lets you compare how the company fared in its most recent year. The balance sheet generally describes the assets owned by the company as well as the claims against those assets by the creditors in monetary terms. The balance sheet is divided into two parts: The first part shows the company's assets; The second part shows the company's liabilities and shareholders' equity. Both sides of the balance sheet must always be equal. This simply means that the total assets equal the total liabilities and stockholders' equity. Each asset, liability and component of shareholders' equity reported in the balance sheet represents an account that has a dollar amount or balance. The assets column consists of tangible and intangible accounts (cash, account receivable, marketable securities, goodwill, patents). The liabilities column, generally consists of all the debt payments (accounts payable, notes payable, income taxes, and other long-term debt).

### **Assets**

In general accounting practices, the total assets of a publicly owned company consists of current assets, fixed assets such as plant and equipment, and other assets such as goodwill and patents.

#### ***Current Assets***

Current assets generally include cash and other marketable securities that are expected to be converted to cash during the next year. The asset that is associated with marketable securities represents investment of excess cash that is not needed immediately in day to day business activity. In a typical business environment, these funds are generally invested in preferred stock or short term fixed income securities such as commercial paper or treasury notes or bills. It is a general practice that these securities be exposed to minimum price fluctuation because these funds may be needed on short notice.

#### ***Fixed Assets***

Fixed assets such as property, plant and equipment represent those assets not intended for sale. These assets are used from time to time to produce or manufacture the product. By general accounting standards, the accepted method for valuation is cost minus depreciation. For accounting purposes, the depreciation is nothing more than the decline of the value of the fixed assets due to wear and tear over a period of time. In addition, fixed assets can also be subject to obsolescence because of more advanced technologies that make the present equipment out of date.

### ***Other Assets***

Other assets can be defined as assets having no physical existence, yet they produce a substantial value to the company. For example, a comic book company may allow the Walt Disney company to use certain cartoon characters or grant a patent for exclusive rights to manufacture a specific article. Another form of intangible asset that is sometimes in the balance sheet is goodwill. Goodwill represents the amount by which the price of the acquired company exceeds the value of the net assets acquired.

### ***Liabilities***

Debt owed by the publicly owned companies can be classified as liabilities. There are three types of liabilities in the balance sheet: 1) Current Liabilities; 2) Other Liabilities; and 3) Long-Term Liabilities.

#### ***Current Liabilities***

Current liabilities include all debts that are due within one year. Current liabilities include accounts payable, notes payable, income taxes payable, and accrued expenses.

#### ***Other Liabilities***

Other liabilities include all liabilities not captured in the current liabilities category.

#### ***Long-Term Liabilities***

Long term liabilities are all debts due after one year from the date of the financial report. One example of this is deferred income taxes. From time to time, the government gives tax incentives to make certain kinds of investments that will benefit the overall economy. This kind of incentive may come in a form of an accelerated depreciation deduction or an investment tax credit. These rapid write-offs in the early years of investment reduce what the company would otherwise owe in current taxes. However, at some point in time, the taxes must be paid. The total accumulation of deferred taxes is then part of long-term liabilities on the balance sheet.

### ***Shareholders' Equity***

The shareholders' equity or stockholders' equity is simply the total of the firm's net worth after subtracting all liabilities. There are many forms of shareholders' equity. The most common are capital stock (common stock and preferred stock) and retained earnings.

#### ***Capital Stock***

Capital stock represents shares in the proprietary interest of the company. These shares are represented by the stock certificates issued by the corporation to its shareholders. There are several classes of shares, each class having different characteristics or attributes. The most common terms that Wall Street uses to identify these classes are common stock and preferred stock.

#### ***Retained Earnings***

When a company earns profits, it may reinvest the profits back into the company. This practice is very common for a US company. When a company first starts in business, it has no retained earnings. Retained earnings accumulate as the company makes profits and reinvests from year to year. When the amount of profit increases, retained earnings increases as well.

## **What Does the Balance Sheet Show?**

There is various information that a government cost analyst can analyze on a balance sheet. In the financial world where billions of dollars change hands in the New York Stock Exchange (NYSE) , Tokyo Stock Market, and other markets in the world, investors always look for certain financial statement ratios for guidance when they make their investments. By the same token, each year the US government, especially the Department of Defense procures billions of dollars in weapon systems from defense contractors. As the defense draw-down continues into the next decade, there will be more and more defense contractors competing against one another to maintain or capture market share. With this thought, the major weapon systems acquisition arena will need state of the art financial analysis tools for analysis of contractor financial data. Program managers must assure themselves that the firms that they deal with are able to meet contractual obligations in term of cost, schedule, and performance. Another way to look at this is from the above perspective that the DOD is simply another big investor with billions of dollars ready to invest into XYZ firm. A careful assessment of the firms financial health must be conducted through analysis of various ratios from the balance sheet figures. Armed with this data, the program manager will be in a much better position to negotiate with potential contractors, make intelligent source selection decisions and monitor contractor performance after contract award. The following sections discusses various ratios that the government cost analysts can use to analyze the financial health of a firm.

## **Net Working Capital**

The net working capital, sometime referred to as working capital, is simply the total current assets less total current liabilities. The working capital represents the amount of money that is outstanding after all current debts are paid off. When the program manager tries to make a decision during the source selection, questions concerning the level of working capital the firm has at its disposal should be addressed. Looking at DoD as a conservative investor, it makes sense to invest only in a company that maintains a comfortable amount of working capital. Another way to analyze this is to evaluate the working capital from year to year. Since only healthy and innovative companies can grow, the working capital should get larger from year to year. If this is true, you can safely assume that a particular company has the ability to meet current obligations, expand volume of sales, and is capable of staying in business.

## **Current Ratio**

In the above section, we pointed out that a healthy firm should maintain a comfortable level of working capital. What is a comfortable level of working capital? There are several methods that the program manager can use to judge whether a company has a sound working capital position. One of these methods is to calculate the current ratio. In general, a current ratio of 2 to 1 is considered acceptable. This means for every \$1 of current liabilities, there should be \$2 in current assets to back it up. This ratio is derived by dividing current assets by current liabilities. This ratio varies from industry to industry. Keep in mind that only companies that maintain a small inventory and have no collectibles problem in their accounts receivable can operate safely with a current ratio lower than 2 to 1.

## **Quick Assets**

In addition to net working capital and current ratio, program managers can use the quick assets ratio to test the adequacy of the current financial position of a company. Quick assets are assets that can easily be converted to cash. In case of emergency these assets can be used as a loan collateral at any financial institutions. Quick Assets are computed by subtracting inventories from current assets. The net quick assets can also be computed by taking the quick assets and subtracting the total current liabilities. The net quick assets measure the ability of a firm to meet its obligations. This can provide an important financial test to the government analyst when conducting the financial analysis. The ratio that the financial

community uses to measure the company's liquidity is called the quick assets ratio. The quick assets ratio can be calculated by dividing quick assets by current liabilities. This type of analysis is a useful tool for the program manager to analyze defense contractors that show a reasonable excess of quick assets over current liabilities.

### **Debt to Equity Ratio**

In business, a certain level of debt is acceptable and sometimes a requisite to enable business expansion. The companies use debt to finance many types of operations such as building plants, purchasing equipment, and other types of expansions. How much level of debt is acceptable to investors? This question can be partially answered by analyzing the debt-to-equity ratio. This ratio is an indicator of whether the firm is excessively using debt for financing purposes. The debt-to-equity ratio is computed by dividing total liabilities by total shareholders' equity. In general, the debt to equity ratio should not be greater than 1. For industries with large capital requirements, investors generally permit this ratio to go over 1 (such as airline and utilities). These types of industries require large amounts of capital up front to finance their operations. The program manager can easily use this ratio as one of the criteria during source selection to measure a company's financial strength. The defense contractors' that have excessive debt generally present a hazardous signal to the defense program.

### **Inventory Turnover**

One way to measure the health of the firm's financial condition is to measure adequacy and balance of inventory. Inventories can easily be compared with the amount of sales for the year. This comparison can be accomplished by computing the inventory turnover rate. For example, a defense contractor has annual sales of \$500M, and inventory on the balance sheet of \$100M. The inventory turnover is \$500M divided by \$100M, the turnover rate of 5 times. This calculation means that goods are bought and sold about 5 times per year on average. A healthy company with strong earnings potential will generally have a high inventory turnover rate.

### **Book Value of Securities**

The net book value or net asset value of the company's securities means the value of the company measured in dollar terms. This value is very important to investors because it represents the amount of corporate assets backing a corporate bond, common stock, or preferred stock. There are three types of calculations to estimate book value: 1) Net Asset Value Per Bond; 2) Net Book Value Per Share of Common Stock; and 3) Net Book Value Per Share of Preferred Stock.

#### ***Net Asset Value Per Bond***

To calculate the net asset value per bond, intangible assets must be subtracted from total assets. This practice is commonly used to promote a conservative approach in calculating the book value. After subtracting intangible assets from total assets, the next step is to subtract total current liabilities from the remaining tangible assets. The result would be the net tangible assets that are available to meet bondholders' claims. To compute the net assets per bond, we then take the net tangible assets divided by the total amount of bonds outstanding.

#### ***Net Book Value Per Share of Common Stock***

To calculate the net assets available for common stock, the same basic procedure for bonds has to be followed. However, with the common stock, any long-term liabilities and outstanding preferred stock issues must be subtracted from total tangible assets. To obtain the net asset value per share of common stock, take the net asset value available from the common stock divided by the total shares of common

stock outstanding. This value measures the amount of money each share of common stock would receive if the company were liquidated. In a bear market, there are many uncertainties and risk. Investors generally look for selected groups of common stocks that maintain a good book value. For example, if you purchased common stock from XYZ Corporation for \$20 per share and the net book value per share of that particular stock is \$21, this stock is then considered to be relatively cheap with a downside potential for risk.

#### ***Net Book Value Per Share of Preferred Stock***

To calculate the net assets available for preferred stock, the same procedure is followed as in corporate bonds with one exception. Long-term debts must be subtracted from total tangible assets along with total current liabilities. Keep in mind that when a company is liquidated, bond holders are paid first, the preferred stock holders second, and common shareholders last.

The book value does not give the total financial picture of a company. Do not be misled by book value figures, particularly that of common stocks. Companies that operate in very profitable environments with strong earnings generally show a very low net book value. On the other hand, some companies such as investment companies, banks, and insurance firms may show a high book value for their common stock with a low earnings or non-profitable activities.

#### **Profitability Ratio**

It is important for program managers and government analysts to understand the topic of profitability. The word profitability may mean different things to different people. Profitability measures how a company performs in a given business environment, and often times leads to many questions concerning strategic planning, adaptability, reorganization, management, cost structure, and etc. How does a company measure profitability? There are three basic calculations for profitability and these are: 1) Profit Margin; 2) Return on Investment (ROI); 3) Return on Equity (ROE).

#### ***Profit Margin***

Profit margin is nothing more than a total return on sales. Profit margin is calculated by taking net incomes divided by sales or revenue. This percentage measures the ability of a company to sell its goods and make a profit in return. It is a rule of thumb to remember that a company must make some kind of profits in order to stay in that business. From the above calculation method, a low percentage of net income to total sales indicates that a particular company has a low profit margin. With this analysis, many assumptions can be made concerning the company such as marketing strategies, cost structure, overheads, pricing, business bases, and etc. The bottom line indication of a low profit margin will generally indicate that a company sells its goods for nearly or less than it costs to make or produce them. However, profit margin alone does not provide the program manager a clear picture of how well the company's management utilizes its resources. Another type of measure of profitability can be calculated to address this area, and that is Return On Investment (ROI).

#### ***Return on Investment (ROI)***

ROI measures the percentage of total net income generated from total assets. This measure is sometimes referred to as return on assets or return on capital employed. ROI reflects the combination of profit margin and the efficiency of the company to utilize its resources. The formula for computing ROI is as follows:

$$\boxed{\text{Net Income/Sales} \times \text{Sales/Total Assets} = \text{ROI}}$$



ROI can also be expressed as:

$$\text{Profit Margin} \times \text{Asset Turnover} = \text{ROI}$$

ROI is a powerful indicator that Government program managers and cost analysts can use to evaluate the health of certain defense contractors operating division. ROI measures the efficiency and the effectiveness of a company's operation, at the division headquarters or any operating locations. The return on the company's investment can be measured by the return on equity (ROE).

#### *Return on Equity (ROE)*

ROE can be expressed by taking the ROI times the amount of leverage (total assets/stockholder's equity). In the world of business finance, a company not only has to be efficient in its operation, but also on its investment strategies. Profitability to the stockholder is measured by percentage of net incomes to the total stockholder's equity. This formula can be expressed as:

$$\text{ROI} \times \text{Leverage} = \text{ROE}$$

ROE can also be expressed as:

$$\text{Profit margin} \times \text{Turnover} \times \text{Leverage} = \text{ROE}$$

or

$$\text{Net Income/Sales} \times \text{Sales/Total Assets} \times \text{Total Assets/Stockholder's Equity} = \text{ROE}$$

#### **Summary**

In the world of weapon systems acquisition, analyzing the defense contractor's financial status is greatly needed. Government Program Managers and cost analysts must be able to confirm that the companies they deal with are able to meet contractual obligations in term of cost, schedule, and performance. A careful analysis of the firms financial health through understanding of financial reporting and ratio analysis will place the government in a much better position to accomplish the following: 1) make an intelligent decision on source selections; 2) negotiate proper progress payments; 3) monitor contractor performance after contract award; and 4) evaluate the impact of potential contractor investment.